



Tobacco Control Research Branch

Behavioral Research Program

Division of Cancer Control and Population Sciences

A monochromatic blue-toned photograph of a person's profile, seen from the side, smoking a cigarette. The person is holding the cigarette with their right hand. In the foreground, several long, pointed tobacco leaves are visible, some overlapping the person's face. The background shows a cloudy sky.

Youth Tobacco Research Meeting

Presenter Abstracts

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(IM) Maturity of Judgment: Psychosocial Development and Decisionmaking During Adolescence

Presenter: Elizabeth Cauffman, Ph.D., Western Psychiatric Institute and Clinic,
University of Pittsburgh

Adolescence is a time of significant developmental change. In addition to being a period of profound biological and cognitive transformations, adolescence is also a time of numerous psychosocial and emotional changes. Individuals develop greater capacity for 1) *responsibility*, which encompasses such characteristics as self-reliance, clarity of identity, and independence; 2) *perspective*, which refers to one's likelihood of considering situations from different viewpoints and placing them in broader social and temporal contexts; and 3) *temperance*, which refers to tendencies to limit impulsivity and to evaluate situations before acting. This presentation examines these features of adolescent development and considers how they are relevant to our understanding of adolescent decisionmaking. In particular, research findings will be presented that indicate that there are significant developmental changes in several aspects of responsibility, perspective, and temperance over the course of adolescence and that, in the aggregate, adolescents exhibit fewer of the characteristics associated with mature judgment than do adults. Moreover, findings will show that individuals with lower levels of responsibility, perspective, and temperance engage in more antisocial behavior than those with higher levels. These results suggest that development in these areas may potentially affect adolescents' decisionmaking and risk-taking in ways that ought to be taken into account when working with and making treatment decisions about this population.

Measuring Tobacco Abstinence Effects in Adolescent Smokers

S. M. Colby, L. Brazil, P. M. Monti, D. J. Rohsenow, R. S. Niaura, and S. Riggs

Presenter: Suzanne M. Colby, Ph.D., Assistant Professor, Center for Alcohol and Addictions Studies, Brown University

The objective of this research was to quantitatively measure the negative effects adolescent smokers experience as a result of tobacco abstinence. A total of 92 adolescents (ages 14-17, 60 daily smokers and 32 nonsmokers) participated in a 2-day laboratory protocol. On Day 1, background measures and baseline assessments potentially affected by withdrawal (withdrawal symptoms, craving, affect, cognitive performance) were completed under normal conditions. On Day 2, participants returned to the laboratory and repeated the assessments. Half of the smokers were randomly assigned to overnight tobacco abstinence preceding this assessment, while the other half smoked as usual. The next part of the Day 2 session was designed to examine the effects of reinstating smoking. Following the initial completion of assessments, abstaining smokers smoked one cigarette in the laboratory. Next, both groups of smokers repeated the assessment battery.

Withdrawal effects were tested using 3 x 2 (group by time) analyses of variance with planned comparisons. Data analyses showed that biochemically confirmed abstaining smokers report significant increases in negative affect ($p < .01$), craving ($p < .0001$), and nicotine withdrawal symptoms ($p < .0001$), but show no commensurate impact on cognitive performance in the laboratory, compared with their age-, gender-, and smoking history-matched peers who do not abstain. The same pattern of results was found when comparing abstaining smokers to their age- and gender-matched nonsmoking peers.

Withdrawal-relief effects were tested using 2 x 2 (group by time) analyses of variance. Results indicated that abstaining smokers' subjective withdrawal effects (negative affect and craving) were immediately reversed after smoking to levels comparable to those of the ad lib smokers. Findings for cognitive performance were contrary to expectations: Abstaining smokers showed performance decrements *after* smoking on 3 of 6 tasks, while performance in ad lib smokers remained constant.

Results suggest that tobacco abstinence produces strong negative subjective effects among adolescent smokers and these effects are reversed when smoking is reinstated, thus potentially reinforcing smoking behavior. Decrements in cognitive performance were not detected in abstaining smokers, but reinstatement of smoking resulted in poorer cognitive performance. Smoking effects in these early-career smokers were more intoxication-like than expected. Findings from this study begin to delineate the order of onset for various withdrawal effects and may shed light on the course of dependence development in adolescent smokers.

Adolescent Brain Development: A Period of Vulnerabilities and Opportunities

Presenter: Ronald E. Dahl, M.D., Associate Professor of Psychiatry and Pediatrics,
Western Psychiatric Institute and Clinic, University of Pittsburgh

This paper presents a model of early adolescent development as a period of special opportunities/vulnerabilities in the pathways toward some disorders of emotion and behavior—and relevance to substance use and abuse. The model focuses on the neuro-developmental underpinnings of mature skills in affect regulation—in particular, a late-developing dimension of affect regulation that includes *cognitive-emotional integration*. This framework emphasizes the *combination* of cognitive skills (e.g., using learned rules, strategies, and plans in the pursuit of long-term goals) *and* emotional self-regulation (e.g., abilities to navigate strong feelings, desires, and competing motivations) in the development of mature judgment, social skills, and behavioral/emotional health in adults. It is also relevant to consider the influence of emotion (and arousal) on decisionmaking. Early adolescence is clearly associated with new cognitive abilities, emotional and motivational changes, as well as the need to self-regulate feelings while navigating increasingly complex social situations, and may represent a sensitive period in the development of cognitive-emotional integration.

Interactions between biology, behavior, and social context are considered within this developmental framework. Specifically, the model addresses the intersection of: 1) Early biologic (pubertal) maturation and the activation of new emotional and motivational tendencies (“igniting passions”). 2) The gradual and relatively prolonged maturation of self-regulatory skills and judgment that continues to develop into early adulthood. 3) Contemporary adolescent social

contexts filled with complex, ambiguous, and emotionally arousing situations. A central issue in considering these interactions is the recent historical changes in the timing of biologic maturation (i.e., much earlier onset of puberty in girls). It appears likely that earlier activation of some biologic maturational processes (changes in brains, bodies, and social experience) may create relative asynchronies in the development of cognitive-emotional integration—particularly in some high-risk individuals and in some high-risk social contexts. This model of early adolescence has profound social policy implications. Several issues are discussed within this framework: 1) The importance of policies for identifying (and protecting) vulnerable or high-risk youth from particularly harmful emotional experiences (and use of addictive substances) during this sensitive period of brain development. 2) The importance of identifying specific types of risk (e.g., family loading for anxiety and affective disorders, early maturing girls in high-risk environments, etc.), and designing more effective targeted early interventions. 3) Since young adolescents are increasingly selecting their own environments (through choices of activities, music, TV, videos, Internet, etc., in ways that can intensify strong emotions), there are several important policy issues regarding adolescents' use of media. 4) Because pubertal brain maturation is associated with an intensification of some emotions and motivations, it may be critical to examine policies related to the provision of opportunities to engage youth in positive, goal-directed, socially responsible activities during this sensitive period.

Psychosocial Influences on Youth Smoking Behavior: Results from the RAND Adolescent/Young Adult Panel Study

Presenters: Phyllis Ellickson, Ph.D., Senior Behavioral Scientist, RAND Corporation,
and Joan Tucker, Ph.D., Behavioral Scientist, RAND Corporation

This presentation describes four papers that address psychosocial antecedents of smoking and one that focuses on high-risk behaviors associated with early smoking.

We find the following:

1. An integrated model of smoking yields better predictions of cigarette use than models based on single theories;
2. The relationship between tobacco use and emotional distress changes over time, with emotional distress predicting subsequent tobacco use during high school, and tobacco use at the end of high school predicting emotional distress 5 years later;
3. Low- and high-risk youth are uniquely vulnerable to some risk factors, but equally vulnerable to others;
4. School-level smoking does not affect future smoking at the individual level, but perceptions of both school-level and small-group smoking do have an impact; and
5. Early smoking, whether occasional or more frequent, is associated with substantial differences in academic problems, drug use, and deviant behavior 5 years later.

Reducing the Social Availability of Tobacco to Youth: The Tobacco-Free Future Study

J.L. Forster, T.M. Blaine, and V. Chen

Presenter: Jean Forster, Ph.D., Professor,
University of Minnesota School of Public Health

In recent years, adolescents report greater reliance on noncommercial sources of tobacco. This increase in use of noncommercial sources of tobacco can be linked to greater restrictions on commercial availability of tobacco to youth. The increasing reliance on social sources by teens points to the urgent need for intervention strategies to address this growing problem. This paper will report the results of a randomized community trial to test a community mobilization approach to reducing the social exchange of cigarettes involving youth. The intervention model for this study hypothesizes that restricting locations where individuals (adults and youth) in the community can smoke will reduce opportunities to exchange cigarettes, as well as reduce observation of role models for smoking, and change the community norms about where it is appropriate to smoke. Fourteen communities in Minnesota were randomly assigned to condition. A community organizer was hired for 28 months, with the goal of mobilizing citizens to press for policy change to increase smoke-free indoor and outdoor areas, especially where youth congregate. The primary outcome for the study is change in smoking rates among youth in the communities. Additional outcomes include local ordinance changes, organizational policy changes, participation in social exchange, and changes in community norms about where it is acceptable for teens and adults to smoke.

Direct and Indirect Influence on Adolescent Smoking

Presenter: Albert C. Gunther, Professor, Department of Life Sciences Communication,
and University of Wisconsin-Madison Comprehensive Cancer Center,
University of Wisconsin-Madison

Mass media is presumed to be a key influence on adolescent smoking adoption, since young people are exposed to substantial numbers of both prosmoking and antismoking messages. However, the extent and nature of direct influence of mass media on adolescent smoking behaviors remain unclear.

What is somewhat more clear is the significant influence of perceived peer norms on adolescent smoking uptake. This paper will explore the question of media influences on perceived peer norms and smoking adoption using recent theoretical work on indirect media effects. In the indirect effects model, young people assume smoking messages will influence their peers (whether or not these messages have any influence on themselves), and that assumption in turn can affect their own smoking behaviors. Thus, indirect influence via perceived peer norms may be a substantial factor in smoking decisions. A more precise picture of indirect media impact via the peer influence process would enable the design of more strategic and effective media campaigns and also better-informed public policy about smoking-related media content.

Efficacy of a Brief Tobacco Prevention and Cessation Program for Teens Seen in Routine Medical Care (Teen Reach)

Jack Hollis, Ph.D.*, Michael Polen, M.A., Evelyn Whitlock, M.D.,
Kaiser Permanente Center for Health Research; Wayne Velicer, Ph.D.,
Colleen A. Redding, Ph.D., University of Rhode Island; and
Ed Lichtenstein, Ph.D., Oregon Research Institute

Presenter: Jack Hollis, Ph.D., Associate Director,
Kaiser Permanente Center for Health Research

Teen REACH was a randomized trial of brief clinician advice, the Pathways to Change interactive computer program, and brief motivational counseling to reduce smoking among 14- to 17-year-old smokers and nonsmokers seen at primary care visits. This population-based, individually tailored intervention capitalized on the *teachable moment* offered by medical visits and the attractiveness of computers to teens. Of 3,747 teens approached in waiting rooms, 2,526 (67 percent) completed a short questionnaire and received additional health information after the visit. Thirty-day smoking prevalence was 23 percent. Teens were randomly assigned to either tobacco intervention or brief dietary advice. Response rates at the 1- (93 percent) and 2-year (88 percent) followups were good.

Among both baseline smokers and nonsmokers, 77 percent of the tobacco intervention group versus 73 percent of the diet control group was smoke-free for at least 30 days after 1 year of followup (GEE OR=1.38, CI=1.11-1.70). After 2 years, the difference was reduced by one-third and was no longer significant. Among regular smokers at baseline, however, 23 percent of the tobacco group versus 13 percent of controls was smoke-free in the past 30 days (GEE OR=2.46, CI=1.47-4.12) at 1 year, and this difference was largely maintained after 2 years (19 percent versus 10 percent, $p<0.03$, OR=2.43, CI=1.39-4.22). Five alternate methods of handling missing data had little effect on outcomes or conclusions.

These results suggest that teens in primary care are interested in and responsive to brief, individualized tobacco control efforts. Regular smokers appeared to benefit most. Medical settings are an important supplement to schools for delivering tobacco interventions to teens.

This research was conducted at the Center for Health Research with support from NCI (P01-CA72085).

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Can Parents Who Smoke Socialize Their Children Against Smoking? Initial Results from the Smoke-Free Kids Project

Christine Jackson, Ph.D., and Denise Dickinson, M.P.H.,
University of North Carolina at Chapel Hill

Presenter: Christine Jackson, Ph.D., Associate Professor, School of Public Health,
University of North Carolina at Chapel Hill

Objective: Evaluate the efficacy and effectiveness of Smoke-Free Kids, an antismoking socialization program for children whose parents smoke cigarettes.

Design: Randomized control trial to evaluate effectiveness; non-randomized control trial to evaluate efficacy.

Participants: At baseline, the nonprobability sample included 901 parents who were smokers and had an abstinent child in the third grade; 671 parents and children provided complete data through the 2-year followup assessment.

Intervention and setting: Delivered to households via mail and telephone over 3 months, the program included five printed modules, newsletters, incentives, and support calls.

Outcomes: Parental antismoking socialization 3 months post-intervention; children's susceptibility to smoking 2 years post-baseline.

Results: The majority of parents who received the program demonstrated adequate program acceptance by using at least three of five program modules ($n = 210$ of 327). Program efficacy was tested by comparing parents who reported adequate acceptance with controls ($n = 344$). Three months post-intervention, parents exposed to the program scored significantly higher than controls on nearly all indicators of antismoking socialization (e.g., monitoring; rewarding abstinence). Two years post-baseline, children exposed to the program scored significantly higher than controls on factors that reduce susceptibility to smoking (e.g., having a social contract to remain abstinent; expecting abstinence to be rewarded), and they scored significantly lower on factors that increase susceptibility to smoking (e.g., intending to smoke; having a best friend who had initiated smoking). Program effectiveness was tested by comparing all parents randomized to treatment ($n = 327$) with controls ($n = 344$). Significant effects were evident for several socialization outcomes (e.g., self-efficacy to prevent smoking; reinforcement of abstinence; effort to counter prosmoking media). However, the magnitude of program effectiveness was systematically lower than the magnitude of program efficacy, such that several of these between-group differences were nonsignificant. The effectiveness analyses also showed that treated children scored higher than controls on factors that lessen susceptibility and lower than controls on factors that increase susceptibility, but the majority of these between-group differences were nonsignificant.

Conclusions: Under the condition of adequate acceptance, the Smoke-Free Kids Project had beneficial effects on antismoking socialization in households where parents smoke cigarettes, and it had a sustained beneficial effect on children's susceptibility to smoking. Increasing the likelihood of program acceptance is necessary before program effectiveness can be demonstrated.

Recruiting Smokers into a Self-Help Cessation Program

Isaac Lipkus, Ph.D.¹, Paul Bloom, Ph.D.², Colleen McBride, Ph.D.¹,
Kathryn Pollak, Ph.D.¹, Rochelle Schwartz-Bloom, Ph.D.¹

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Presenters: Isaac Lipkus, Ph.D., Associate Research Professor, Duke University Medical Center,
and Paul Bloom, Ph.D., Professor, University of North Carolina at Chapel Hill

We conducted a two-group randomized trial to test the efficacy of self-help materials with or without the adjunct of telephone counseling. The sample was obtained from teen smokers recruited from shopping malls across 11 Southern States (e.g., North and South Carolina, Georgia, Tennessee). At these malls, we tested the efficacy of a social influence technique called the foot-in-the-door (FITD). Teens were randomized at malls to a “light” or “heavy” FITD condition. To be eligible, teens had to be between the ages of 15-18 and smoked a cigarette, even a puff, during the last 7 days.

Overall, 39,454 teens were intercepted at malls, of which 13,565 were between the ages of 15-18. Of these, 5,591 (41 percent) smoked at least a puff during the last month. Among the 5,591 teens, 3,837 (69 percent) were randomized and took part in the FITD treatment, of which 2,119 (55 percent) gave consent to be called back to hear about the program. Consent did not differ between FITD conditions. Ultimately, 12 percent (n=402) of those who participated in the FITD treatment participated in the cessation program and completed a baseline questionnaire.

The 402 teens recruited at baseline (51 percent women, 82 percent White, mean age = 17) were randomized to 1 of 2 groups: 1) written self-help material plus video (control arm, n=193), or 2) written self-help material, video, and telephone counseling (counseling arm, n=209). The self-help materials were developed by Shu-Hong Zhu to be appealing and informative to teen and young adult smokers who called the California Smoking Hotline. The 5-minute video was designed to motivate teens to review the self-help materials. The goals of the telephone counseling were to direct teens to review the self-help materials, answer any questions they may have about smoking, and to encourage and provide assistance for cessation. Teens could receive up to three telephone counseling calls spaced 2 to 3 weeks apart. They were recontacted at 4 and 8 months post-baseline. All counseling calls were completed prior to the 4-month contact. Overall, 118 teens in the control and counseling arm completed the 4-month call, respectively (N=236, 59 percent response rate). Overall, 123 and 125 teens completed the 8-month interview, respectively (N=248, 62 percent response rate).

Using an intent-to-treat approach, cessation rates at 4 months post-baseline for the control and counseling arms were 11 percent and 16 percent, respectively ($p=.25$). Cessation rates at 8 months for the control and counseling arms were 18 percent and 19 percent, respectively ($p=.98$). Continued abstinence in the control and counseling arms were 6 percent and 9 percent, respectively. Based on the observed data, cessation rates at 4 months post-baseline did not differ between arms (19 percent versus 28 percent for control and counseling, respectively, $p=.12$); nor did they differ at 8 months post-baseline (28 percent versus 32 percent for control and counseling, respectively, $p=.58$). Reported continued abstinence did not differ between arms (13 percent versus 20 percent for control and counseling, respectively, $p=.23$).

Teens rated the intervention materials favorably. Close to half of participants watched the video. Approximately 75 percent read some or most of the self-help booklets, of which 42 percent and 51 percent made use of the suggestions in the booklet at 4 and 8 months post-baseline, respectively. Overall, 72 percent, 52 percent, and 36 percent of teens completed one, two, and three counseling calls, respectively. In general, participants felt very comfortable talking to the telephone counselor ($M=6.3$ on 7-point scale). After talking to the counselor, teens felt more confident in being able to quit ($M=5.9$), wanted to stop smoking ($M=5.1$), viewed their smoking more negatively ($M=5.2$), and felt encouraged to read the self-materials ($M=5.5$)—all assessed on 7-points scales. Teens who received more counseling calls felt a stronger desire to quit ($r=.23$, $p<.02$), viewed their smoking more negatively ($r=.23$, $p<.05$), and felt more encouraged to read the self-help materials ($r=.30$, $p<.003$). Many (69 percent) tried the counselor's suggestions to help them quit, with a greater likelihood of making use of the advice with more sessions ($r=.16$, $p=.14$).

Overall, these results suggest that a large number of teen smokers can be reached at malls with the proportions agreeing to enroll in a cessation program exceeding what is typically found in adult-based recruitment approaches (i.e., 2 percent). While cessation rates between intervention arms did not differ, these rates compare favorably with more intensive cessation interventions in which rates range on average from 12 to 19 percent. Furthermore, the self-help materials and counseling were well received, suggesting that they be used in future programs to motivate cessation.

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Translating Research Findings for Tobacco Advocacy and Tobacco Control Programs

Presenter: Daniel McGoldrick, M.A., Director of Research,
Campaign for Tobacco-Free Kids

Danny McGoldrick, the Director of Research at the Campaign for Tobacco-Free Kids, will talk about the importance of research to tobacco control policy and programs. He will address how research has created the science base for both policy and program interventions and the importance of continuing to build the science base on prevention, cessation, and policy initiatives. He will also describe the policy context in which research is conducted and how the results of tobacco policy research contribute to media and policy advocacy efforts.

Mr. McGoldrick will review the key policy initiatives currently underway in tobacco control, describe the role of new research in those initiatives, and present specific examples of how tobacco policy research has influenced the policy process.

Context and Subjective Experience of Early Smokers

Robin Mermelstein, Ph.D., Donald Hedeker, Ph.D., Brian Flay, and D. Phil,
University of Illinois at Chicago, and Saul Shiffman, Ph.D., University of Pittsburgh

Presenter: Robin Mermelstein, Ph.D., Deputy Director, Health Research and Policy Centers,
University of Illinois, Chicago

The overall goals of this study are to: 1) increase our understanding of the “natural history” of patterns of youth smoking from nonsmoking, yet “susceptible” stages to more regular smoking; 2) identify predictors of these trajectories of use; and 3) examine how adolescents’ subjective experience of early trials of cigarette smoking influences their future smoking behavior. This presentation will describe the design of this “Early Smoking” study and present results highlighting data from ecological momentary assessments.

The design of the Early Smoking study involves sampling 8th and 10th graders at baseline who fall into the early stages of cigarette use: 1) susceptibles (youth who have never smoked, but who indicate high “susceptibility” based on intentions); 2) early triers (youth who have had their first smoking experience within the past 90 days, and who have had no more than 20 cigarettes in their lifetimes); and 3) experimenters (youth who have smoked in the past 30 days, and have smoked between 20 and 99 cigarettes in their lifetimes). Adolescents were invited to participate in the longitudinal study based on responses to a self-report screener. Youth are followed longitudinally and assessed four times: at baseline, 6, 12, and 18 months. Parents are also assessed at baseline and 12 months. The study uses a multi-modal approach to data collection through the use of extensive self-report questionnaires at the beginning of every measurement wave, 7-day Ecological Momentary Assessments (EMA) through the use of hand-held computers at the baseline through 12-month waves, daily written diary reports of the day’s events during the 7-day EMA periods, and indepth interviews at each assessment point. The sample was recruited through two cohorts: a pilot cohort (N= 126), and a main cohort (N = 459). Of the students who met our eligibility criteria through the screening, 49 percent agreed to participate.

This presentation will focus on the data from the ecological momentary assessments or electronic diaries (ED) with the adolescents. The adolescents carry the hand-held computers (Electronic Diaries or ED) for 7 consecutive days every 6 months. They are trained to respond to “random prompt” interview, and also to self-initiate recordings of both smoking episodes and “no smoke” events (defined as times when the adolescent considers smoking and has an opportunity to smoke, but makes an active decision not to smoke). The ED interviews ask about mood, activity (what the adolescent is doing), companionship (with whom or alone), presence of other smokers, place (where they are), and other behaviors (eating, drinking, substance use).

We will address the following questions: 1) What moods are associated with smoking and nonsmoking times, and do these moods vary by level of use? 2) Do changes in moods surrounding smoking predict escalation? 3) Is there individual stability in mood responses to smoking? What proportion of mood variation is situationally determined? Our results from the baseline and 6-month data collection waves suggest that smoking occurs in the context of positive moods and further enhances positive moods for more experienced smokers. For early triers, though, smoking may well be prompted by feelings of embarrassment and being left out. Preliminary longitudinal data also suggest that positive mood changes following smoking may predict smoking escalation. In sum, the ED data provide a unique opportunity to examine more closely the relationships between mood and smoking behavior changes.

Social Norm Change and the Impact on Teen Smoking

John P. Pierce and Betsy Gilpin

Presenter: John P. Pierce, Ph.D., Professor, University of California, San Diego

California has conducted large-population cross-sectional surveys to measure the prevalence of smoking in adolescents every 3 years throughout the 1990s, as part of the evaluation of its Tobacco Control Program. There was no change in prevalence between the 1990 and 1993 surveys. A large increase was observed between 1993 and 1996. Finally, an even larger decrease was observed between 1996 and 1999.

In addition to the cross-sectional surveys, we have two longitudinal surveys, 1993-1996 and 1996-1999, that help us investigate the different influences associated with these large swings in smoking behavior. In this talk we focus on initiation among never smokers.

Between 1993 and 1996, the cross-sectional surveys indicated that more Californian never smokers had smoking friends, more were responsive to tobacco advertising and promotions, more were susceptible to smoke, and more thought that smoking was normative. These changes would predict a higher initiation rate among these 1996 never smokers, which did not happen. By 1999, Californian never smokers had fewer smoking friends, were less likely to be receptive to Tobacco Industry promotional strategies, thought it was harder to get cigarettes, and thought that smoking was much less normative.

The longitudinal data confirmed that the same variables predicted initiation in both periods. However, within each risk factor, there was a marked reduction in the transitions to smoking among adolescents who did not have the risk factor, and minimal change among those who had the risk factor. This suggests that tobacco control programs may work best by preventing adolescents from making the first moves toward smoking.

Adolescent Development: Neuroscience Perspectives

Presenter: Daniel S. Pine, M.D., Chief, Section on Development and Affective Neuroscience, National Institute of Mental Health

Objective: Considerable epidemiological research documents increase during adolescence in the risk for various adverse health consequences. Much of this increase relates to changes in behavior. Recent breakthroughs in neuroscience methodology provide a unique opportunity to examine the relationship between aspects of brain development and such changes in behavior occurring during adolescent development.

Method: The presentation will review data from a series of developmentally focused epidemiological and neuroscience studies in healthy adolescents and adolescents with mood or anxiety disorders. This review will consider the relevance of recent advances in neuroscience methodology, including fMRI, for prior research in developmental psychology.

Results: Adolescence is characterized by a marked increase in risk for mood and anxiety disorders. This increase may be tied to changes in brain processes engaged by the processing of emotionally salient stimuli. The presentation will consider neural aspects of two psychological processes that may relate to these and other aspects of adolescent development. First, the

presentation will explore changes in brain function that may relate to adolescent increasing capacities for extrapolating information learned in one context to a novel context. Second, the presentation will explore changes in brain function that may relate to adolescent changes in attention regulation under conditions of increasing arousal.

Conclusions: Advances in neuroscience provide a unique opportunity for enhancing knowledge about adolescent development.

Results of a School-Based Smoking Cessation Program for Teens

Leslie A. Robinson, Brant W. Riedel, Robert C. Klesges, and Bonnie McLain-Allen,
University of Memphis Center for Community Health

Presenter: Leslie A. Robinson, Ph.D., Associate Professor, Cancer Prevention,
Detection, and Control Research, University of Memphis

A variety of effective smoking prevention programs have been developed for youth. However, much less is known about how to help adolescents stop smoking once they start. The few trials that have been conducted often have produced disappointing results, with difficulty recruiting adolescent smokers constituting a significant barrier to success. Schools, of course, provide an excellent resource for recruiting adolescent smokers and conducting interventions. However, the traditional response by schools to cigarette smoking among students has been suspension. A logical alternative would be to offer a smoking cessation program for youth caught using tobacco.

This study was designed to examine the effectiveness of a school-based smoking cessation program among students who were caught smoking on school property. Middle and high school participants drawn from two large school districts were randomly assigned to one of two groups: 1) a four-session treatment program combining a motivational intervention with behavioral skills training, followed by monthly phone calls to provide a stage-matched intervention, or 2) a self-help program used as a control. Measures of smoking behavior, nicotine dependence, withdrawal, stage of change, mood, and beliefs about smoking were assessed at baseline and posttreatment; a 12-month followup is currently being conducted.

To date, 261 participants have completed the program and provided posttest data. One-year followup data are still being collected, but outcomes are already available on 150 of these students. In this report, we will provide information on the particular characteristics of students who are caught smoking at school, along with preliminary outcome data on the effectiveness of the cessation program. Implications for conducting school-based smoking cessation interventions among adolescent smokers will be discussed.

This study was supported by grant #DA12532 from the National Cancer Institute.

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The Use of Smokeless Tobacco by Young People: Prevalence, Prevention, and Cessation

Presenter: Herbert H. Severson, Ph.D., Research Scientist, Oregon Research Institute

The presentation will briefly review the current prevalence and patterns of smokeless tobacco use by young people in the United States. The review will also include perceptions of risk and other variables associated with onset and use of moist snuff and chewing tobacco by adolescents. A review of the outcomes of prevention studies and research on cessation will lead to a discussion of research that is needed in this neglected area of tobacco use and addiction.

Television and Norms of Smoking

Presenter: James Shanahan, Ph.D., Associate Professor, Department of
Communication, Cornell University

This presentation examines several theories of television exposure, opinion expression, and general perspectives on mass communication and smoking. The talk looks at how some of the macrosocial approaches to communication might be useful for exploring future directions in communication research on tobacco. Theories examined include the theory of cultivation (Shanahan & Morgan, 1999) and “spiral of silence” (Noelle-Nuemann, 1973).

Shanahan, J. & Morgan, M. (1999). *Television and its viewers*. Cambridge University Press.

Noelle-Neumann, E. (1973). *The spiral of silence*. Chicago: University of Chicago Press.